epiTRENDS

A Monthly Bulletin on Epidemiology & Public Health Practice in Washington State

Vol. 3 No. 8

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8.98

Health Care Trends and Costs: Study Assesses Changes in Breast Cancer Surgery

Efforts to contain rising health care costs have led to shorter hospital stays and a shifting of some surgical procedures to outpatient treatment. Is this trend also affecting surgery for breast cancer? If so, does it have ramifications for cost and perhaps quality of care for one of the most common and serious diseases affecting women? Are women being discharged from hospitals too soon following breast cancer surgery?

Such questions prompted the 1998 Washington State Legislature to ask the Department of Health (DOH) to assess the need for legislation mandating hospital length of stay for breast cancer surgery. DOH has completed an initial study that attempted to answer two key questions:

- Have changes occurred in treatment setting and length of stay?
- If so, to what extent do clinical or demographic factors explain these changes?

The Study

DOH researchers obtained records for all female breast cancer patients diagnosed in 1992 and 1995 who were reported to the Washington State Cancer Registry (WSCR). They linked these records to records from 1992 and 1995 in the Comprehensive Hospital and Abstract Reporting System (CHARS). CHARS contains information on all inpatient discharges from acute care civilian hospitals in Washington State. Cancer registry records that successfully linked to CHARS were considered to represent inpatient surgeries, and records that did not match were considered to be outpatients.

After several exclusion criteria were applied to reduce the likelihood of misclassification as an outpatient, 1316 (60%) of 2182 patients in the 1992 registry file were classified as inpatients and 866 were classified as outpatients. From the 1995 registry file, 1127 (44%) of 2540 patients were classified as inpatients and 1413 as outpatients.

The study compared 1992 and 1995 female breast cancer patients for changes in setting (inpatient or outpatient), length of stay, age, the spread of cancer (stage at diagnosis), and surgical procedures (mastectomy or lumpectomy, with or without removal of lymph nodes). Further statistical anlaysis determined the effect of year on the risk of being hospitalized and the risk of having a length of stay of two days or longer (after controlling for age, the spread of cancer, and surgical procedures).

Changes Found

The study revealed that breast cancer surgeries performed in an outpatient setting increased from 40% of all surgeries in 1992 to 56% in 1995 — a 40% increase. Also, 77% of the women receiving *inpatient* breast

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Vibrio Prompts Closure of Hood Canal Shellfish Beds

Two cases of infection with *Vibrio parahaemolyticus* (Vp) resulted in the July 30 mandatory closure of a portion of Hood Canal from Jackson Cove to Pleasant Harbor in Jefferson County to both recreational and commercial oyster harvesting. Totten and Skookum Inlets were closed to all oyster harvesting on August 3 and Quilcene Bay on Hood Canal was closed on August 11 after environmental testing of oyster samples found levels of Vp that exceeded regulatory guidelines.

The Department of Health has asked shellfish growers and tribes who harvest in selected areas of south Puget Sound and the rest of Hood Canal to voluntarily stop

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Breast Cancer *(from page 1)*

cancer surgeries in 1992 were hospitalized for two days or longer compared to only 56% of those patients in 1995, a 27% drop. Both changes were statistically significant.

The researchers considered several demographic and clinical factors including age, spread of tumor, proportion of lumpectomies versus mastectomies, and lymph node removal to determine whether changes occurred between 1992 and 1995 that could explain the observed differences in treatment setting and length of stay.

The findings did not show a significant change in the age distribution of the women receiving surgery between 1992 and 1995. There was a small increase in the proportion of breast tumors identified before spreading into adjacent tissue, a small decline in the proportion of mastectomies versus less invasive lumpectomies, and a small decline in the proportion of surgeries with removal of lymph nodes (Table 1).

To determine to what degree the change in setting and length of stay was associated with the factors described above, the researchers compared outpatients to inpatients, and then for inpatients only, they compared patients with a one-day length of stay to patients with a stay of two days or longer. For both parts of the analysis they analyzed age, cancer stage, lymph node removal, and type of surgical procedure to see if these factors affected the changes in treatment setting and length of stay that occurred between 1992 and 1995.

Results in the first part of the analysis showed that independent of changes in age, disease spread, and lymph node dissection, women who had lumpectomies in 1995 were 40% less likely to have the surgery in an inpatient setting than were women who had a lumpectomy in 1992. Independent of the above factors, women who had mastectomies in 1995 were 15% less likely to have the surgery in an inpatient setting compared to women who had mastectomies in 1992.

The second part of the analysis showed that independent of changes in age, disease spread, and surgical procedures, women who were hosptialized 1995 were 27% less likely to stay for two or more days than were women hospitalized in 1992.

Further Research Needed

The changes between 1992 and 1995 in setting and length of stay for women receiving breast cancer surgery are significant, and age, spread of disease, and surgical procedures do not fully account for the changes. These findings seem to indicate that most of the change is driven by a combination of shifts in treatment practices (e.g., in surgical technique or anesthesia) and non-medically related changes in health care policy. Additional research is needed to understand the role of these factors. ◆

TABLE 1: Factors studied in association with changes in setting and length of stay for breast cancer surgery, 1992 (n = 2182) and 1995 (n = 2540)

	Percent of Women		
Factors	1992	1995	p Value
In-situ or local disease at diagnosis	72%	75%	.04
Mastectomies (vs. lumpectomies)	59%	52%	.001
Lymph node removal	79%	74%	.001

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Thank you for your help. With your support we can continue to provide you with timely, valuable information on health issues and public health practice in Washington.

Proposed Changes in Notifiable Conditions:

Update on Hepatitis C

The April Issue of *epiTrends* reported proposed additions and deletions to the notifiable conditions reporting system. Examples of such changes include the addition of hepatitis C, hantavirus pulmonary syndrome, and occupational asthma, and the deletion of smallpox, Kawasaki syndrome, and toxic shock syndrome. Beginning with this issue of *epiTrends*, monthly articles will describe proposed additions and the "who," "what," and "where" of reporting.

Hepatitis C has gained greater public attention with recent announcements of a nationwide notification of persons exposed to the virus through blood transfusions in the early 1990s. An estimated four million persons in the United States are chronically infected with hepatitis C virus with 35,000 to 180,000 new infections occurring each year. Although most acute infections are asymptomatic, about 85% of infected persons develop chronic hepatitis and 60% develop chronic liver disease (including cirrhosis). An estimated 8,000 to 10,000 deaths result from hepatitis C each year.

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Monthly Surveillance Data by County

July 1998* – Washington State Department of Health

County	E. coli O157:H7	Salmonella	Shigella	Hepatitis A	Hepatitis B	Non-A, Non-B Hepatitis	Meningococcal Disease	Pertussis	Tuberculosis	Chlamydia	Gonorrhea	AIDS	Pesticides†	Lead§#
Adams	0	0	0	0	0	0	0	0	0	2	0	0	4	0/#
Asotin	0	0	0	1	0	0	0	0	0	5	0	0	1	0/0
Benton	0	0	0	0	0	0	0	0	1	38	1	0	5	1/28
Chelan	0	2	0	0	0	1	0	0	1	11	0	0	2	0/0
Clallam	0	1	0	0	0	0	0	0	0	11	0	0	0	0/#
Clark	0	2	0	5	3	0	0	0	0	59	7	0	1	0/0
Columbia	0	0	0	0	0	0	0	0	0	0	0	0	0	0/0
Cowlitz	0	1	0	0	0	0	0	1	1	4	1	0	1	0/11
Douglas	0	0	0	0	0	0	0	0	1	5	0	0	1	0/0
Ferry	0	0	0	0	0	0	0	0	0	1	0	0	0	0/0
Franklin	0	0	0	0	0	0	0	0	0	15	1	0	6	0/#
Garfield	0	0	0	0	0	0	0	0	0	0	0	0	0	0/0
Grant	0	0	0	0	0	0	0	0	0	19	2	0	6	0/#
Grays Harbor	0	0	0	0	0	0	1	0	1	15	1	0	0	1/#
Island	0	0	0	0	0	0	1	0	0	9	1	0	0	0/#
Jefferson	0	0	0	0	0	0	0	0	0	2	0	0	0	0/#
King	3	29	8	37	0	0	2	33	12	344	104	16	14	5/23
Kitsap	0	2	0	1	0	0	0	0	1	69	6	2	2	0/16
Kittitas	0	1	0	2	0	0	0	0	0	2	0	0	0	0/0
Klickitat	0	0	0	0	0	0	0	0	0	2	0	0	1	0/0
Lewis	0	1	0	0	0	0	0	0	0	14	1	0	1	0/#
Lincoln	0	0	0	2	0	0	0	0	0	1	0	0	0	0/0
Mason	0	0	0	0	0	0	0	0	0	7	0	0	1	0/0
Okanogan	0	0	0	1	0	0	0	0	0	9	6	0	7	0/0
Pacific	0	0	0	0	0	0	0	0	0	0	0	0	0	0/#
Pend Oreille	0	0	0	0	0	0	0	0	0	0	0	0	0	0/0
Pierce	0	5	0	2	1	0	1	2	3	171	38	9	1	1/94
San Juan	0	0	0	0	0	0	0	0	0	0	0	0	0	0/0
Skagit	0	7	0	0	0	0	0	0	0	20	3	0	3	0/#
Skamania	0	0	0	0	0	0	0	0	0	0	0	0	0	0/0
Snohomish	0	7	0	5	1	0	1	7	0	69	7	1	2	0/6
Spokane	0	0	0	16	1	0	0	0	1	80	12	2	4	2/16
Stevens	0	0	0	1	0	0	0	0	0	2	0	1	0	0/#
Thurston	0	2	0	4	0	0	0	1	1	34	0	0	0	0/5
Wahkiakum	0	0	0	0	0	0	0	0	0	0	0	0	0	0/0
Walla Walla	0	1	0	1	0	0	0	0	1	7	0	2	1	1/#
Whatcom	1	3	3	0	0	0	0	0	0	43	0	0	0	0/#
Whitman	0	1	0	1	0	0	1	0	0	3	0	0	1	0/0
Yakima	0	0	2	0	0	0	0	2	1	78	7	0	17	3/19
Unknown														0/6
Current Month	4	65	13	79	6	1	7	46	24	1151	198	32	82	14/249
July 1997	10	36	19	34	9	4	4	34	36	817	170	51	72	34/701
1998 to date	29	242	69	646	58	11	48	185	146	6435	1098	248	272	111/2059
1997 to date	33	315	119	314	48	18	56	216	182	5419	1135	388	219	101/2739

* Data are provisional based on reports received as of July 31, unless otherwise noted.

† Unconfirmed reports of illness associated with pesticide exposure.

§# Number of elevated tests (data include unconfirmed reports) / total tests performed (not number of children tested); number of tests per county indicates county of health care provider, not county of residence for children tested; # means fewer than 5 tests performed, number omitted for confidentiality reasons.

Hepatitis C Surveillance *(from page 2)*

WWW
Access Tips

The website address for the Department of Health Washington State Cancer Registry is: http://www.doh.wa.gov/EHSPHL/Epidemiology/wscr1.htm

The primary purpose of hepatitis C surveillance will be to better understand the incidence, prevalence, and distribution of this infection in Washington. The chronic nature of hepatitis C and the difficulty in diagnosing acute infection requires that physicians play a major role in reporting. Given the lack of an IgM test to identify acute infections, the case definition will be a diagnosis of exclusion (i.e., clinical symptoms of jaundice or elevated ALT or SGPT, negative tests for acute infection with hepatitis A or B, and no other known reason for hepatitis). Chronic hepatitis C will be defined as having antibody to hepatitis C virus verified by a supplemental laboratory test and the absence of acute clinical illness.

As with other notifiable conditions, health care providers will send case reports to local health departments for forwarding to the State Department of Health. Local health departments will be encouraged to collect detailed information on acute cases to determine modes of transmission and high-risk communities. Estimates for prevalence of infection will be based on acute and chronic cases.

Based on these reports, local health departments also may offer primary and secondary prevention services depending on availability of resources. Such services may include counseling to prevent spread of infection to needle-sharing and sexual partners and exposure to hepatotoxins (e.g., alcohol), immunization against both hepatitis A and B, and referral for treatment (e.g., interferon and/or ribavirin).

Questions about hepatitis C reporting should be directed to Dr. Marcia Goldoft (206-361-2886). Questions about the notifiable conditions revision should be directed to Greg Smith (360-236-3704).

Shellfish Closures *(from page 1)*

the sale of shellstock oysters intended for raw consumption. In addition, growers have been asked to label all bags or other containers of all shellfish product with a message to “cook thoroughly.” Cooking oysters and other shellfish to at least 140°F kills *Vibrio* species.

Closures can change so obtain current information by calling the DOH Shellfish Program (360-236-3330) or the biotoxin hotline (1-800-562-5632). Health care providers and laboratories should report confirmed or suspected Vp cases to the local health jurisdiction (LHJ) within seven working days. LHJs should then contact the DOH Communicable Disease Epidemiology section (206-361-2914; fax: 206-361-2930).

Sentinel Physicians Needed for Influenza Surveillance

The Washington State Department of Health, in conjunction with the Centers for Disease Control and Prevention, seeks sentinel physicians for influenza surveillance during the 1998–99 season. If interested, contact Phyllis Shoemaker at 206-361-2830 by August 31.

*epi*TRENDS is published monthly by the Washington State Department of Health.

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